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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/615,099

07/08/2003

Larry V. Dalrymple

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7590

07/23/2004

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EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,099

Applicant(s)

DALRYMPLE ET AL. *AK*

Examiner

Tran N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 13-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restriction

1. Applicant's election of claims 1-12, per response filed 6/14/04, is acknowledged. Since Applicant did not provide any traversal arguments to the restriction requirement, the response is considered as election without traverse; therefore, the election/restriction is made FINAL.

Claim Rejections - 35 USC § 112

2. Claims 2-3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2, “dielectric film is nonmeltable”, and in claim 3, “the dielectric film of each of the tubes is nonmeltable and is bonded to a carrier layer of a meltable material” are indefinite because they are relative recitations. Any material would be melt at a certain melting temperature thereof. Or vice versa, that same material would be nonmeltable at a temperature that is lower than the material’s melting temperature. Thus, dielectric film is nonmeltable at what temperature? The carrier layer is meltable material at what temperature?

In light of the spec, it is understood that “dielectric film is nonmeltable” and “the dielectric film of each of the tubes is nonmeltable and is bonded to a carrier layer of a meltable material” the at the temperature range that generated by the motor during operation. In claim 3 “carrier layer of a *meltable material*”, and in claim 8 “a layer of a *material that fuses* to the dielectric film” are indefinite. Neither recitations set clear limitation of the material of the carrier layer. The term “meltable material” and “material that fuses” do not provide any metes and bound for the type of material. In other words, with the recitation, one skilled in the art would not ably to figure out what kind of material, i.e., metallic or nonmetallic material, magnetic or nonmagnetic metal, fluid or gas or powder material, that has certain characteristics.

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Thus, with this recitation, one skilled in the art would not be able to figure out or determine whether there is a patentable infringement or not. *According to MPEP section 2171*, two Separate Requirements for Claims Under 35 U.S.C. 112, Second Paragraph:

(1) the claims must set forth the subject matter that applicants regard as their invention; and

(2) *the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.* (Emphasis added).
Appropriate corrections are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubokawa (US 6,176,691) in view of Beckman (US 5,306,976).

Regarding claims 1-3, 5, 8-9 and 11, Tsubokawa discloses a motor comprising:

a housing (1);
a stator having slots that form passages;
a dielectric film (10) inserted within each of the passages defining a sealed outer margin;
and a plurality of windings (11) inserted there through, wherein
the dielectric film is nonmeltable (10A) and is bonded to a carrier layer of a meltable material (10B). In other words, the dielectric film is composed of inner slot insulation film (10A) and the outer carrier layer (10B), wherein dielectric film (10A) has the characteristic of temperature withstand of 160 C degrees (table 1), which is considered to be nonmeltable, while the carrier layer (10B) has the characteristic of temperature

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withstand of 105 C degrees (table 1), which is considered to be meltable. That means the carrier layer (10B) fuses the dielectric film (10A) when a melting temperature is applied to the carrier layer.

Tsubokawa substantially discloses the claimed invention, except for the following limitations:

The stator is discs laminated core;

dielectric film is configured as a tube, wherein the slots have side edges that are straight and outer edges that are curved, and wherein the tubes have portions that are substantially flush with the side edges and the outer edges.

Beckman, however, teaches a motor having a stator core (115) is a stack of steel laminations, i.e., laminated core that is quite well-known in the art. Beckman, particularly teaches the dielectric film (302) is configured as a slot liner tube (fig 3), wherein the tube have side edges that are straight and outer edges that are curved, and wherein the tubes have portions that are substantially flush with the side edges and the outer edges. As shown in fig 3 slot liner tube (302) is to be disposed in slot (204) between stator core (115) and winding stage (122) and is *substantially coterminous with the slot* at the longitudinal ends (118, 119) of the slot. Slot liner tube (302) has a transverse wall 305 and opposing side walls (308A, 308B) projecting outwardly from opposite edge margins of the transverse wall 305. The side walls (308A-B) and transverse wall (305) of the slot liner tube are substantially *coterminous* with the opposing surfaces (210A-B) and bottom wall (213) defining the slot, respectively. Slot liner tube (302) also includes a the end(311A-B) overlap edges bonded together. Beckman's laminated core would enhance electrical resistant characteristics of the core, and the slot liner tube configuration would enable the tube to be cuffless while having substantially same shape with the slot.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator by configuring the core as laminated core and the slot liner as a tube, as taught by Beckman. Doing so would enhance the stator core performance by increasing electrical resistance due to laminated core, and improve the slot lining for insulating the winding from the slot with enhance slot liner tube.

Regarding the material of the dielectric layer to be polyimide, and the carrier layer to be thermoplastic material, as in claims 4 and 12, dielectric material polyimide is a known suitable material for fabricating slot liner, evidently the applicant admits this fact in the

disclosure of Background of the Invention section. Furthermore, those skilled in the art would understand that Tsubokawa's important teaching is that the slot lining tube should be formed with a dielectric layer to insulating the winding from the core slot, and a meltable carrier layer, located facing the slot' wall, for bonding the slot liner to the slot since the carrier layer is meltable, that is having a lower melting temperature than that of the dielectric film layer. Thus, it would have been obvious to an artisan to apply this essential disclosure in selecting suitable materials for both the dielectric layer and the carrier layer. Evidently the applicant's disclosure states that the material for the dielectric layer can be many well-known material such as polyimide or may be of various materials (spec, page 5 lines 20-24) and the carrier layer material can be many suitable material also (spec, page 6 lines 2-8).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator by selecting polyimide to be the material for the dielectric film, and to select thermoplastic as the material for the carrier layer. Doing so would to ensure the meltable and nonmeltable characteristic of the tube's layers. Also, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding the size and thickness of the tube, as recited in claims 6-7 and 10-11, Beckman teaches to form the slot lining tube that takes substantially the same shape and that snugly fitted in the slot. This would yield the tube's cross-sectional area and circumference to be the same with that of the slot.

Nevertheless, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator's slot lining tube by configure the size/shape thereof so that it has the cross-sectional area or the circumference that is substantially equal to that of the slot, or the determine a suitable thickness of the slot lining tube based upon the size and shape of the winding being accommodated within the slot. Such modification has been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tran N. Nguyen

Primary Examiner

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